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ABSTRACT

The primary focus of the Concerns Based Adoption Model (CBAM) is the individual teacher and professor involved in exploring, selecting, and implementing educational innovations. The conceptual basis of CBAM proposes developmental steps of growth in feelings and skills that are experienced by individuals as they adopt innovations. The CBAM also suggests a process that managers of change can use to diagnose the developmental readiness of individuals during the adoption process. This particular research effort entails developing measures and conducting studies that will lead to initial empirical verification of the stages of concerns and levels of use dimensions. The research is focused around four key questions: (1) Are there differentiable stages of concern about an innovation? (2) Are there differentiable levels of use of innovation? (3) Are there concerns about and use of an innovation "developmental"? and (4) How are concerns about and use of an innovation related to each other? Using these questions as a basis, the project is involved in four work efforts: Measurement Development; Cross Sectional Studies; Longitudinal Studies; and Immediate Utility and Heuristic Studies. (DMT)

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THE EFFECTS OF "CHANGE" ON TEACHERS AND PROFESSORS -- THEORY, RESEARCH AND IMPLICATIONS FOR DECISION-MAKERS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Gene E. Hall

November 1975

Preconference draft for presentation at the National Invitational Conference on Research on Teacher Effects: An Examination by Policy-Makers and Researchers.

The research described herein was conducted under contract with the National Institute of Education. The opinions expressed are those of the author and do not necessarily reflect the position or policy of the National Institute of Education, and no endorsement by the National Institute of Education should be inferred.

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THE EFFECTS OF "CHANGE" ON TEACHERS AND PROFESSORS -- THEORY, RESEARCH AND IMPLICATIONS FOR DECISION-MAKERS[1]

Gene E. Hall[2]

Preconference Draft for Presentation at the National Invitational Conference on Research on Teacher Effects: An Examination by Policy-Makers and Researchers

"We live in a time of change." How frequently we utter this phrase and, along with our utterance, convey a sense of futility. All around us, we see change: new highways, buildings, millionaires, the seasons. Yet, many feel helpless to affect their own destiny. When we propose what to us is a novel solution, we are told that it has been tried before. We see others as obstructing us, or as having more influence and power (votes, dollars).

In the midst of all of this change, we have lost perspective on what change means and what (who) changes. In education, it seems that the changes that most people recognize most easily are the addition of <u>things</u> to the classroom, new curricula boxes on the shelf. "Everyone is going back to the basics," "all of the walls are gone," buses. Few seem to recognize that change is only accomplished in fact when the individuals that use these things change. Having the walls torn down does not guarantee that the teachers will teach differently, especially during their first year in the new environment.

In education our approach to change is to add things. Whenever there is a problem, the cure is to add something; process curricula, new organizational

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[2]The author is a member of an interdisciplinary team involved in this research. Other team members are: William Rutherford, Susan Loucks, Archie George, Beulah Newlove, Brad Manning and Oliver Bown.

structures, more time, more training, more controls. We have added so many cure-alls that the pile of unused and "ineffective" remedies has become an obstacle. Our focus on changing by adding things and our failure to be sensitive to the changes that individuals must make to use these things have become the problem.

Since most of us easily recognize large-scale, system-wide changes, we have behaved as if the way to change things is to make large-scale, system-wide changes. Thus, national curricula are developed, open concept schools are built, and these many "innovations" are proudly "adopted" -- all at the same time. Rationally, we know from various pieces of evaluation feedback that these large-scale changes don't really have all that much of an effect on kids. We also know that there is not widespread diffusion of the many educational innovations that are available. Recently-developed science curricula appear in only about 10% of the classrooms, teachers set up bookcase barricades in open spaces, and teacher educators continue to lecture. At the overview level, there has been addition of curricula, new organizational structures, etc.; however, on the individual level, there is little change -- just system overload.

In the "CBAM" Project at the Research and Development Center for Teacher Education at the University of Texas at Austin, we believe that the reason for so little meaningful change is that the focus of change has been almost completely on the large-system level, when the focus should first be on the individuals that must make the change. We do not deny the importance of system level change; however, we think that change at this level will not be accomplished unless the individual members are attended to.

In this paper, I would like to share briefly with you a little about our theory/model, some of our hypotheses, some related research activities and findings, and to discuss some of the implications that we feel they have for policy-makers, evaluators, change agents, adoption agents and decision makers at the

local, state and federal levels. It has been our experience that our ideas are seen as particularly useful by members of these various constituencies. Yet, I must also point out that our experience tells us that our ideas and research findings have some implications that many of you do not want to face. Although the data is there and many know that the implications are indeed true, there are personal, political and economic perceptions that lead people to avoid the obvious course suggested by the data. Let's begin by looking more closely at our model.

The Concerns-Based Adoption Model

The primary focus of our research is the individual -- the individual teacher and professor involved in exploring, selecting, and implementing educational innovations. We have been working with more than 1,000 teachers and college professors across the country as they are involved in "adopting" various educational innovations. The conceptual basis for our research is the Concerns-Based Adoption Model (CBAM) (Hall, Wallace & Dossett, 1973) which proposes developmental steps of growth in feelings and skills that are experienced by individuals as they adopt innovations. The CBAM also suggests a process that managers of change can use to diagnose the developmental readiness of individuals during the adoption process and, thereby, more effectively intervene and facilitate the process.

A key assumption of the CBAM is that innovation adoption is a process and not an event. Each of us, when confronted with use of an innovation, does not automatically and instantaneously become a mature, sophisticated and confident user of the innovation. Instead, the change entails developmental growth in concerns about the innovation and in skill in using the innovation. The CBAM describes these steps as Stages of Concern About the Innovation and Levels of Use of the Innovation.

The CBAM was developed out of the experiences of the authors as we worked

extensively in schools and colleges with teachers and professors as they implemented various educational innovations. In our work as adoption agents, we lived "in the trenches" with practitioners as they were involved in the day-to-day problems, successes and failures of attempting to implement such educational innovations as recently-developed science curricula, competency-based teacher education, new organizational structures and new instructional facilities.

While doing this change agentry work, we kept on-going logs of our experiences and the problems, feelings and experiences of the innovation users. As the number of institutions and individuals that we worked with increased, it became increasingly apparent that there were recurring patterns in terms of the kinds of problems that were encountered, and in terms of the kinds of feelings, frustrations and motivations that were reported by the users of the innovations. As these repetitions were identified, the documentation activities that we used were adjusted in order to more closely log and describe the common problems and perceptions that were observed across innovations and across institutions. Out of this extensive field experience and documentation of these experiences, as well as from the literature, the Concerns-Based Adoption Model began to take shape.

A related note can be made here. At this time there is much discussion of the concept of grounded theory, that is, theory that is based on real world experiences and phenomena rather than theory that has been developed in some ivory tower. Perhaps the latter could be referred to as "arm chair theory." As I have attempted to briefly document above, the CBAM is very much grounded in the real world experiences of the developers and through a series of case studies grounded in the experiences of other change agents and adoption agents as they have been involved in working with classroom teachers and college and university professors.

Concerns About the Innovation

In addition to real-world experiences and the change literature in general, the CBAM is also tied to a set of research studies that Frances Fuller (1969, 1972) conducted and reported as she conceptualized the Concerns Theory for teacher education. In our work with colleges and schools it became readily apparent to us that the concept of concerns was not limited to preservice and inservice teachers as they progress through a teacher education program. Concerns are part of the change process as experienced by individual educators involved in implementing various innovations as well. Thus, one of the two key dimensions of the Concerns-Based Adoption Model is the concerns of the innovation users. This dimension has been defined and described as Stages of Concern About the Innovation. It is hypothesized that as individuals move from unawareness and nonuse of an innovation to ultimate, highly sophisticated use of the innovation, their "concerns" move through identifiable stages as well. There appears to be a somewhat developmental progression in the kinds of concerns that innovation users have about their use of an innovation.

It was hypothesized that as individuals first become aware of and consider using an innovation, they have much more intense self concerns. Their questions include "How much of my time will this take?" "I need to know more about what kinds of materials will be required if I am going to use this," "What does my principal (department chairperson) think of my using this innovation, and how will it affect my salary and promotion?"

As use of the innovation begins, the user has more task concerns. Expressions such as "I'm spending all of my time in planning," "Decision making seems to take forever," "I still have to do my planning outside of team meetings," "Getting all of the preassessment and postassessment graded is consuming all of my time," and "I'm having no time for other kinds of activities," are heard.

After many of these task-oriented issues are resolved, the innovation users may proceed to more intense impact concerns. These are exhibited through such expressions as: "I am wondering how I can refine my use of this innovation in order to get more student learning," "I would like to work with others in using this innovation because I think we can get more accomplished this way," "I'm wondering if there are other innovations or ideas that would help in my use of this innovation and make it even more effective in terms of student outcomes." In total, seven Stages of Concern were hypothesized to be a part of an individual's affective field in relation to an innovation. These Stages of Concern are summarized in Figure 1.

Figure 2 is a plot of the hypothesized relative intensity of the different Stages of Concern over time. We are hypothesizing that there is a kind of "wave motion" from left to right of intensity of concern as a user becomes more sophisticated in using an innovation. Moving to higher Stages of Concern, however, is not solely dependent on accumulating years of experience with the innovation. Concerns reflect motivations, needs, satisfactions, worries and frustrations. If the lower Stages are not resolved, then the higher Stages are not likely to emerge.

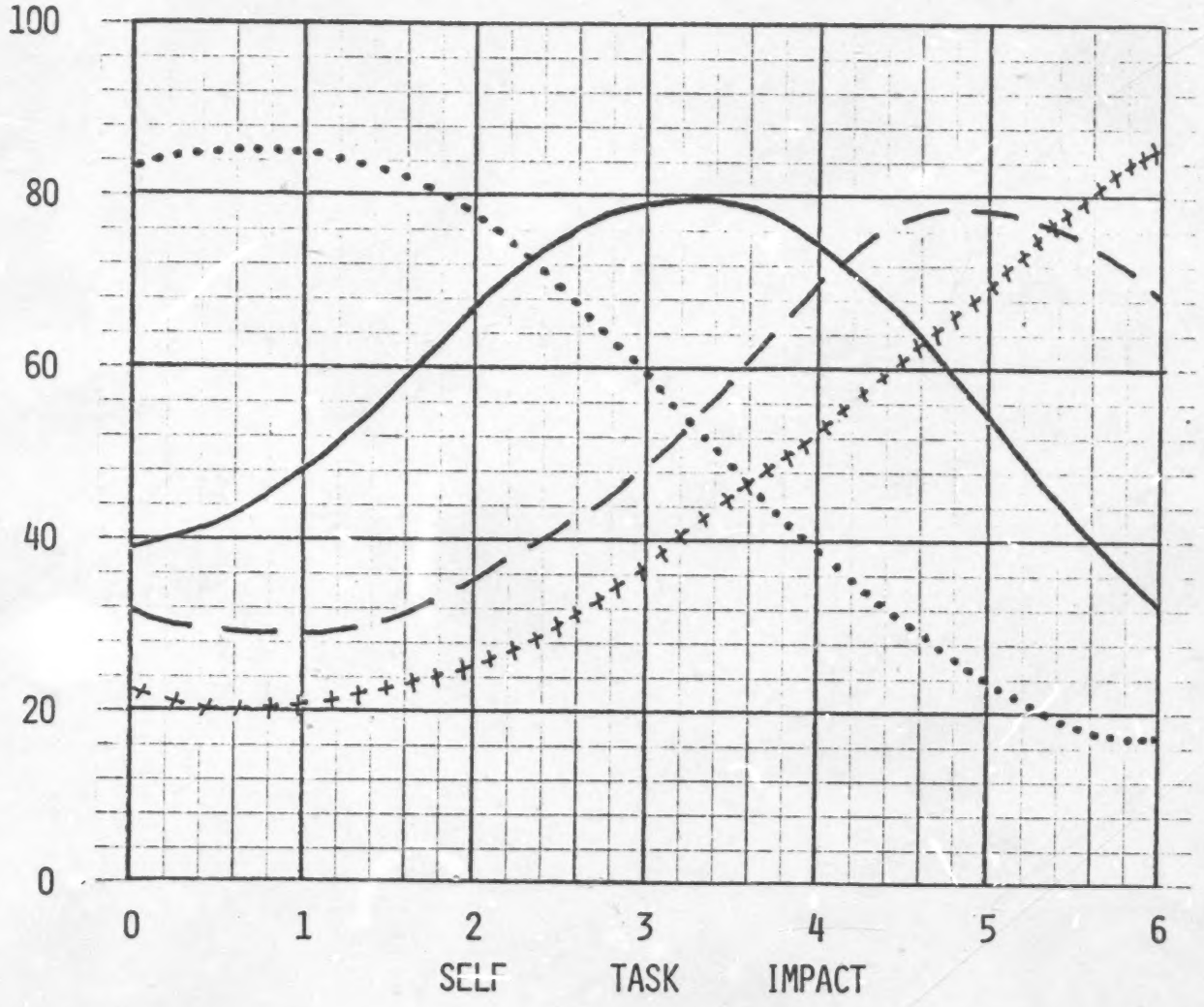
Levels of Use of the Innovation

Although concerns about the innovation are considered to be very important and serve as one primary dimension of the Concerns-Based Adoption Model, an equally important dimension is the actual behavior exhibited by each innovation user. In the CBAM, it is hypothesized that the behaviors demonstrated by an innovation user can also be described and identified along a developmental stairway. It should be emphasized that this dimension, the Levels of Use of the Innovation (LoU) (Hall, Loucks, Rutherford & Newlove, 1975) focuses on the behaviors of the innovation user and attempts to eliminate from consideration

Figure 1. Stages of Concern About the Innovation

STAGE OF CONCERN	DEFINITION OF CONCERN
0 AWARENESS	No indication of interest in or concern about the innovation.
I INFORMATIONAL	Expresses a general awareness of the innovation and learning more about it. The user seems to be unworried about himself in relation to the innovation. The potential adopter considers substantative aspects of the innovation in a selfless manner inquiring about general characteristics, effects, and requirements for use. Information needs and interest are of a more cursory nature reflecting general non-committal feelings, limited evaluation and minimal personal investment.
II PERSONAL	Reflects uncertainity about the roles played by the individual user and of the demands placed upon him, including analysis of his role in relation to the reward structure of the organization decision making and consideration of potential conflicts with existing structures or personal commitment that have financial or status implication of the program for self and colleagues may also be expressed.
III MANAGEMENT	Expressions about the process of using the innovation and the best use of information and resources. Statements focus on issues related to efficiency, organizing, managing, scheduling, and changing time demands.
IV CONSEQUENCE	Indications of exploration of impact of the innovation on clients in one's immediate sphere of influence. Expressions about relevance for clients, evaluation of client outcomes, including performance and competencies, and how his use of the innovation can be changed to increase client outcomes are stated.
V COLLABORATION	Focus is on increasing impact on clients through collaboration with others regarding use of the innovation.
VI REFOCUSING	Indications of user's exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative.

Figure 2. Hypothesized Development of SoC



the feelings or affect that the innovation user has about the innovation. The emphasis here is on what the innovation user is doing with the innovation.

The Levels of Use dimension (see Figure 3) also involves a hypothesized developmental progression. The Levels of Use progression moves in general from an orienting time to a decision to use, to a management oriented kind of use of the innovation, and ultimately to an integrated use of the innovation. The LoU dimension is not at all limited to classroom behaviors, but takes into account user behaviors at all times and in all places relative to the innovation. For example, the person at the Orientation Level is looking for information (at a professional meeting) and considering the strengths and weaknesses of using the innovation (by talking with others) and is involved with acquiring information (by reading brochures) and assessing the potential gains and losses associated with use of the innovation (by estimating time and dollar costs).

It is hypothesized that the kinds of behaviors that the innovation user demonstrates during the orienting level of use are altogether different than the kinds of behaviors that would be found when the innovation user is at some other level. For example, at the "Mechanical" level of use, which is commonly demonstrated by first-time users of an innovation, the user is looking for ideas and techniques that will make his use of the innovation more efficient rather than soliciting general, descriptive information as s/he would be at the Orientation level. At the Mechanical level also there is a more disjointed and uncoordinated use of the innovation. The user is heavily involved with management. The user's guide may be close at hand and referred to quite often. The day-to-day logistics of use of the innovation require a great deal of the user's time and energies.

At a later time, it has been hypothesized that innovation users' behaviors involve more refinement in use of the innovation, and changes in use focus specifically on increasing learning outcomes. At an even later level of use, the innovation user may begin to reach out to colleagues and begin collaborative use

Figure 3. Levels of Use of the Innovation

LEVELS OF USE	DEFINITION OF USE
0 NON-USE	State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.
I ORIENTATION	State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.
II PREPARATION	State in which the user is preparing for first use of the innovation.
III MECHANICAL USE	State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.
IVA ROUTINE	Use of the innovation is stablized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.
IVB REFINEMENT	State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.
V INTEGRATION	State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.
VI RENEWAL	State in which the user reevaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.

of the innovation.

Often, one's first impression of LoU is that it is a very rigid sequence and does not allow for variation in the innovation. In fact, one of the key characteristics of LoU that has to be determined before an individual can be assessed is the nature of the changes in use of the innovation that are being made. The Decision Points, which are included in the full operational definition of LoU (see The LoU Chart, 1975) have as their basis the type and extent of changes that are being made. Rather than LoU representing a description of adoption as application of the innovation in its pure form in a new setting, LoU focuses on the changes in use, the "adaptations," if you wish, that individual users make. For example, changes in management techniques are indicative of the Mechanical Level. The presence or absence of changes and the kinds of changes that are made determine the Overall Level. Even the most teacher-proof curriculum box entails the user's development of new skills and varying the approach to using the innovation as these skills are learned and problems are encountered.

The Bigger Picture

The Concerns-Based Adoption Model in its entirety takes into account many other variables besides the individual innovation user's Stages of Concern (SoC) and Levels of Use (LoU) of the innovation. Ultimately, it is essential that the whole morass of the user system be looked at -- that is, an entire school or school system must be taken into account as well. However, the perspective of the CBAM is that the primary focus must be upon the individual innovation user. The user system variables can then be looked upon in relation to how they influence and affect the concerns and use of each of the individuals. Concerns and use are considered to be more easily handled manifestations of the composite user system. The various individuals' concerns and use are then placed within the context of the entire user system, its climate, its organizational structures,

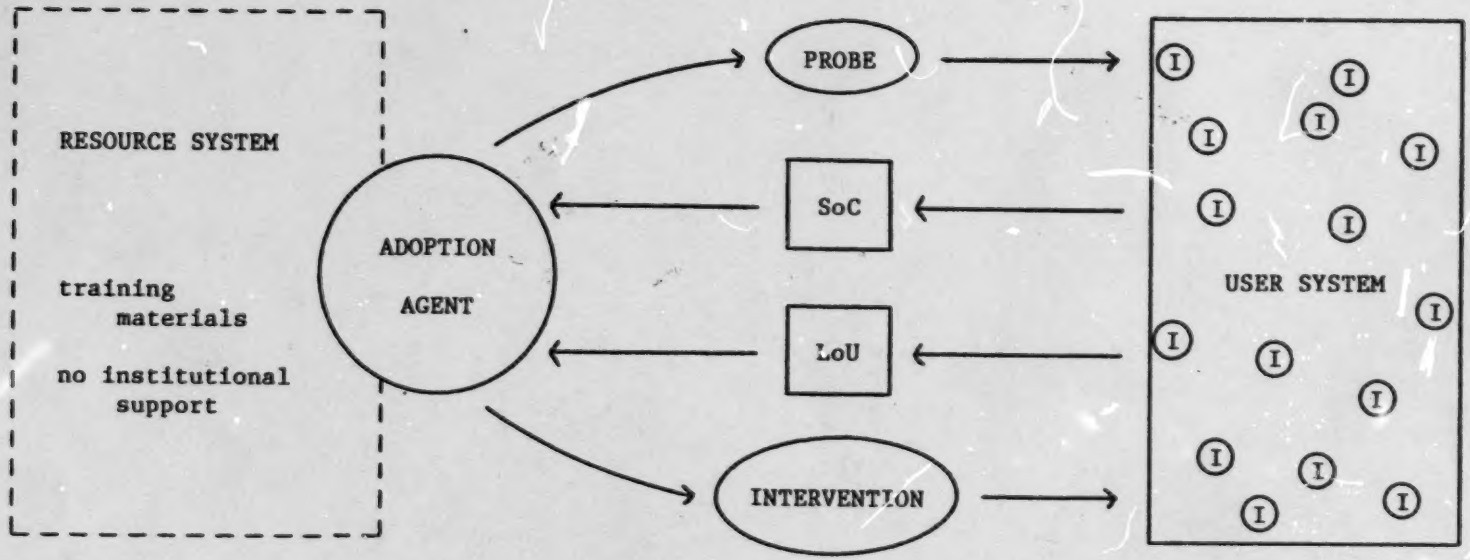
its communication channels, its available resources, etc.

In relation to implementing innovations, at an even broader level there can usually be identified one or more resource experts who are available to aid and facilitate in the implementation effort. We refer to these experts, who are knowledgeable in use of the innovation and also in change agentry, as adoption agents. The adoption agent is able to call upon various kinds of resources that can be used to facilitate the implementation effort. The adoption agent represents a resource system of from very limited to very elaborate scope. This resource system may be completely informal, consisting mainly of a principal, or be a formal institution, such as a school or school system, in which the adoption agent serves as a staff development specialist. Or the agent may be with a separate agency altogether, such as a regional lab or Title III Center. Wherever based, the adoption agent has resources available as well as technical knowledge and skills that can be brought to bear to facilitate the implementation effort.

As illustrated in Figure 4, the CBAM and its fuller picture sees the adoption agent as linked to a series of resources, constantly probing the members of the user system to assess their concerns and use of the innovation. Based upon this diagnostic data, the adoption agent is able to select interventions that will be efficient effective and personalized for facilitating the implementation effort.

Perhaps it is important to point out at this time some other assumptions underlying the CBAM that were not mentioned earlier. First, we are assuming that the innovation being adopted is worthwhile. If the innovation is not worthwhile then the normal movement across stages and levels that we are hypothesizing will not occur. Those of you who are knowledgeable of Concerns Theory will recognize this phenomenon immediately. The early concerns of innovation users will not progress to later stages of concerns if the innovation is not seen as one that will be worthwhile. Pushing the innovation will result in counter-implementing

Figure 4. The Concerns-Based Adoption Model as Applied by an Outside Adoption Agent with Limited Resources



behaviors on the part of the potential users. Another assumption we are making and are trying to emphasize is that innovation adoption can be effective, efficient, economical, and personalized. Decreeing that teachers will begin IGE or that a college or state will implement CBTE does not mean that individuals will "use" the innovation. By being aware of some of the problems inherent in the implementation process and having some hand-holds, we think that those who are responsible for facilitating implementation can be more effective in doing their work. And those who are using the innovation can more easily develop the necessary skills and use the innovation effectively with less anxiety and counter-productive energy investment.

CBAM Research

Our present research effort entails developing measures and conducting research studies that will lead to initial empirical verification of the Stages of Concern and Levels of Use dimensions. The research is focused around four key questions:

1. Are there differentiable Stages of Concern About an Innovation?
2. Are there differentiable Levels of Use of an Innovation?
3. Are concerns about and use of an innovation "developmental?"
4. How are concerns about and use of an innovation related to each other?"

Using these four questions as a basis for our work, the Procedures for Adopting Educational Innovations Project is involved in four work efforts. The Work Components are: (1) Measurement Development, (2) Cross-Sectional Studies, (3) Longitudinal Studies, and (4) Immediate Utility and Heuristic Studies.

Measuring SoC and LoU

In order to answer the first two questions, that is, do concerns and use exist, it was necessary to develop measurement systems for assessing each and

then to conduct a series of reliability and validity studies. The measurement development effort began in the fall of 1973 and has resulted in a 35-item checklist for assessing Stage of Concern About the Innovation and a "focused" interview for assessing Levels of Use of the Innovation. These two measurement systems have been through a series of reliability and validity studies.

Development of the Stage of Concern Checklist began with a large sample of teachers and professors who were asked to express, in writing, their concerns about an innovation being adopted at their institutions. These statements and others that were generated by adoption agent notes and from first-hand experiences were classified according to the Stages of Concern as described in the CBAM. The items were refined and a Likert scale was constructed for use with 195 of the items. This prototype measure was responded to by 366 classroom teachers and college professors who were asked to indicate the degree to which each statement represented their current concerns about an identifiable innovation. The resultant data were then factor analyzed, and the factors rotated toward the hypothesized structure (i.e., the defined SoC). The 35-item Stage of Concern Checklist was then constructed by selecting from among the strongest items (factor loadings greater than 0.5) on the rotated factors.

The SoC Checklist consists of seven scales, each of which contains five items. The measure has been analyzed in several reliability and validity studies. One week test-retest correlations on the seven scales ranged from .65 to .86. The internal consistency (alpha coefficients) of the scales ranged from .80 to .93, and the alpha coefficient for the total score was .96.

For measuring Level of Use, a "focused" interview technique has been developed. The interview appears to the user as a general conversation about what they are doing with the innovation. The interviewer uses a branching technique based on the defined decision points which separate each level. Specific probes

are used to gain further detailed information which serves as additional data points for increasing confidence in the final LoU determination. For research purposes, the LoU interview is tape-recorded and subsequently rated by trained raters. Rater reliability coefficients are generally in the .64 to .81 range.

An interesting outcome of this measurement development-initial verification effort is worth pointing out. Initially the Level of Use dimension consisted of a Level IV, called the Independent Level. As originally hypothesized, this Level encompassed all individuals who were using the innovation reasonably well by themselves and were making changes in their use to increase student impact. However, based on the data collected in the 74-75 academic year, it became apparent that there were actually two kinds of innovation users that were being classified together as Level IV: those who were comfortable in their use of the innovation and were changing little, if anything; and those who were actively changing how they used the innovation in order to enhance student outcomes. Thus, Level IV was divided into Level IV-A for Routine innovation users and Level IV-B for Refinement users. Across the innovations we have studied, 66% of the users are at LoU IV-A.

Research Design

In order to address the question, "are the phenomena of concerns and use developmental," we first conducted a series of cross-sectional studies in which stratified samples were selected based on years of experience with each innovation. Thus, each sample has a range from those not using the innovation and not involved with it at all, to those who are just beginning to use the innovation, to those who have been using it for three or four years, and finally to those who have been using it for five years or longer. With this stratified sample, we were able to explore whether or not the various stages and levels occur and

to look at any patterns that emerge in relation to years of experience with the innovations.

We are not at all intimating that time is the sole, or even most important, predictor for effecting advancement in concerns and use. However, it seemed to be the best variable to use as the basis for selecting a stratified sample that would give us an estimate of the existence of the various levels of use and stages of concern that the research questions were addressing.

Following the cross-sectional studies, we have repeated data collection on the same samples involving ourselves in a two-year longitudinal study of individuals as they gain experience in using the innovations of teaming in elementary schools and modules in colleges. Thus, at the end of the 75-76 academic year, we will have fall and spring SoC and LoU data on the samples for two academic years. We will then be able to begin to look at how individuals change over a two-year period and how the dimensions of SoC and LoU change over a two-year period. We are also conducting several small case studies with relatively simple curriculum innovations in which we are documenting more closely the advancement of the Stages of Concern and Levels of Use, again to test the "developmentalness" of concerns and use.

Findings from CBAM Research

The research studies that we have been conducting to test whether or not SoC and LoU exist and whether or not they are developmental have employed several different innovations and have involved both classroom teachers and college and university professors. The innovations that have been used in elementary school samples include teaming, individualized instruction in reading and mathematics, and the Science Curriculum Improvement Study. In colleges and universities we have been studying the adoption of instructional modules in teacher education

institutions. We have also conducted several small-scale pilot studies of workshops and small-scale implementation efforts where personnel involved with the implementations were interested in having diagnostic or evaluative data.

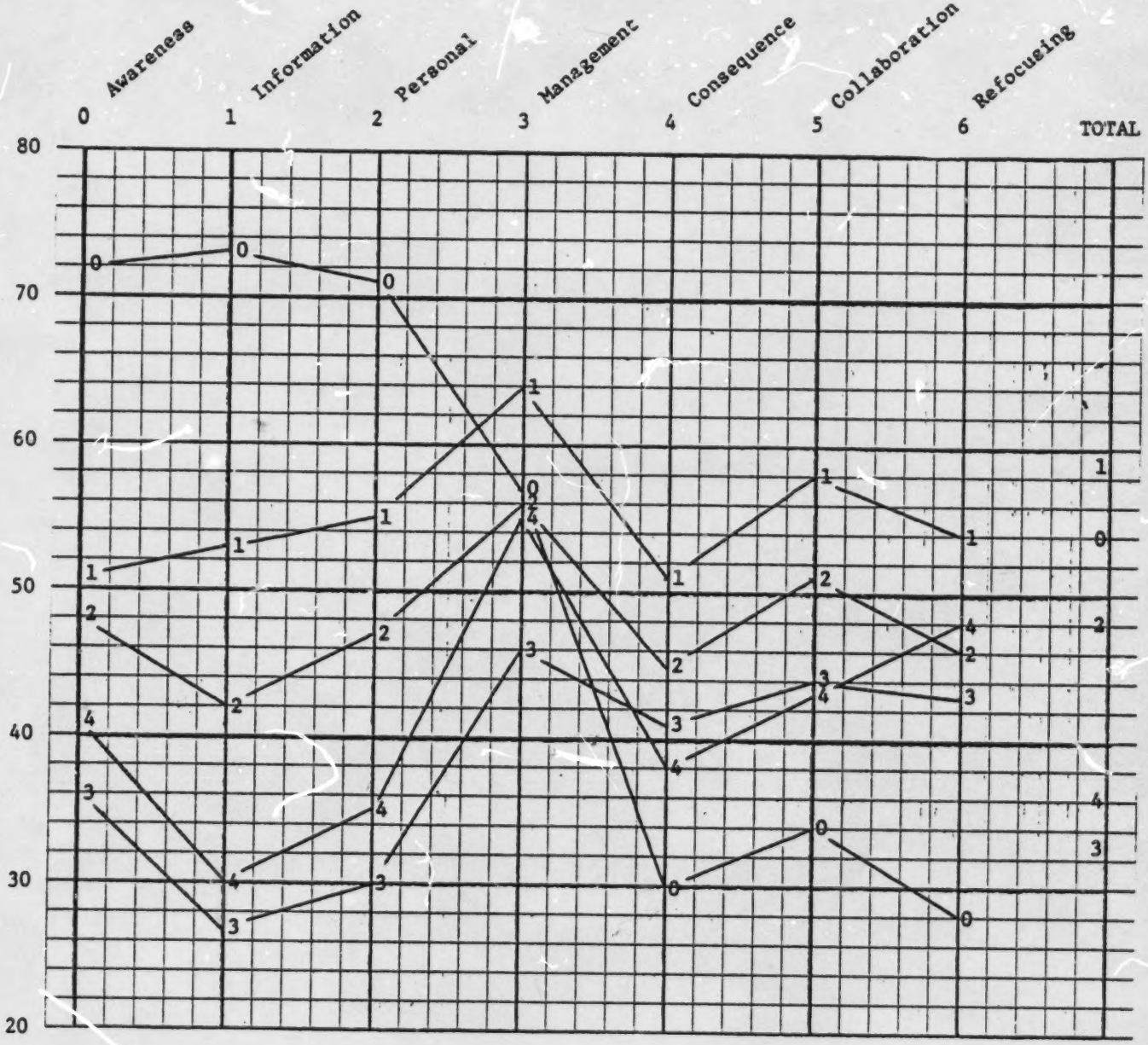
The two innovations that we have researched the heaviest in the last two years have been the use of instructional modules in teacher education institutions and team teaching in elementary schools. With both innovations, concerns and use data are being collected several times during the two-year period. Data is being gathered on approximately 400 college professors and 400 teachers for their respective innovations. The data were analyzed according to the Stage of Concern and Level of Use of the individuals; this data is also being related to other variables such as years of experience with the innovation.

Stages of Concern About the Innovation

Based on the reliability and validity studies, we are confident that the concerns phenomenon exists. To answer the question of whether or not concerns are developmental, the cross-sectional study data were prepared so that comparisons of concerns with the amount of experience with the innovation could be made. In order to remove bias due to a particular innovation and to make scores on different stages readily compariable, percentile scores were computed based on combined data from modules and teaming. Figure 5 is a graphical representation of the SoC percentile scores of teachers with different years of experience with teaming. Due to the nature of the questions being asked, identification of patterns and trends in the data seems to be more valid than conducting a series of tests of statistical significance. The following trends can be noted (for more detailed reporting on this data, see Hall & Rutherford, 1975):

> Trend 1. As many experienced adoption agents would expect, the most outstanding pattern in the data is the distinctive profile of those teachers who are not involved in teaming. Their Stage 0, 1, and 2 concerns are particularly intense in comparison to those of teachers who are teaming and

Figure 5. Distribution of Teachers' Concerns About Teaming According to Years of Experience with Teaming



0 = no experience with teaming	N = 46
1 = first year of teaming	N = 76
2 = second year of teaming	N = 18
3 = third year of teaming	N = 60
4 = fourth or later year of teaming	N = 107

in comparison to their own scores on Stages 4, 5 and 6. The profile is very similar to what we had hypothesized for nonusers.

Trend 2. Another identified pattern that the experienced adoption agent would predict is that, in general, it appears that the more years of experience teachers have with teaming, the less intense their concerns are about it.

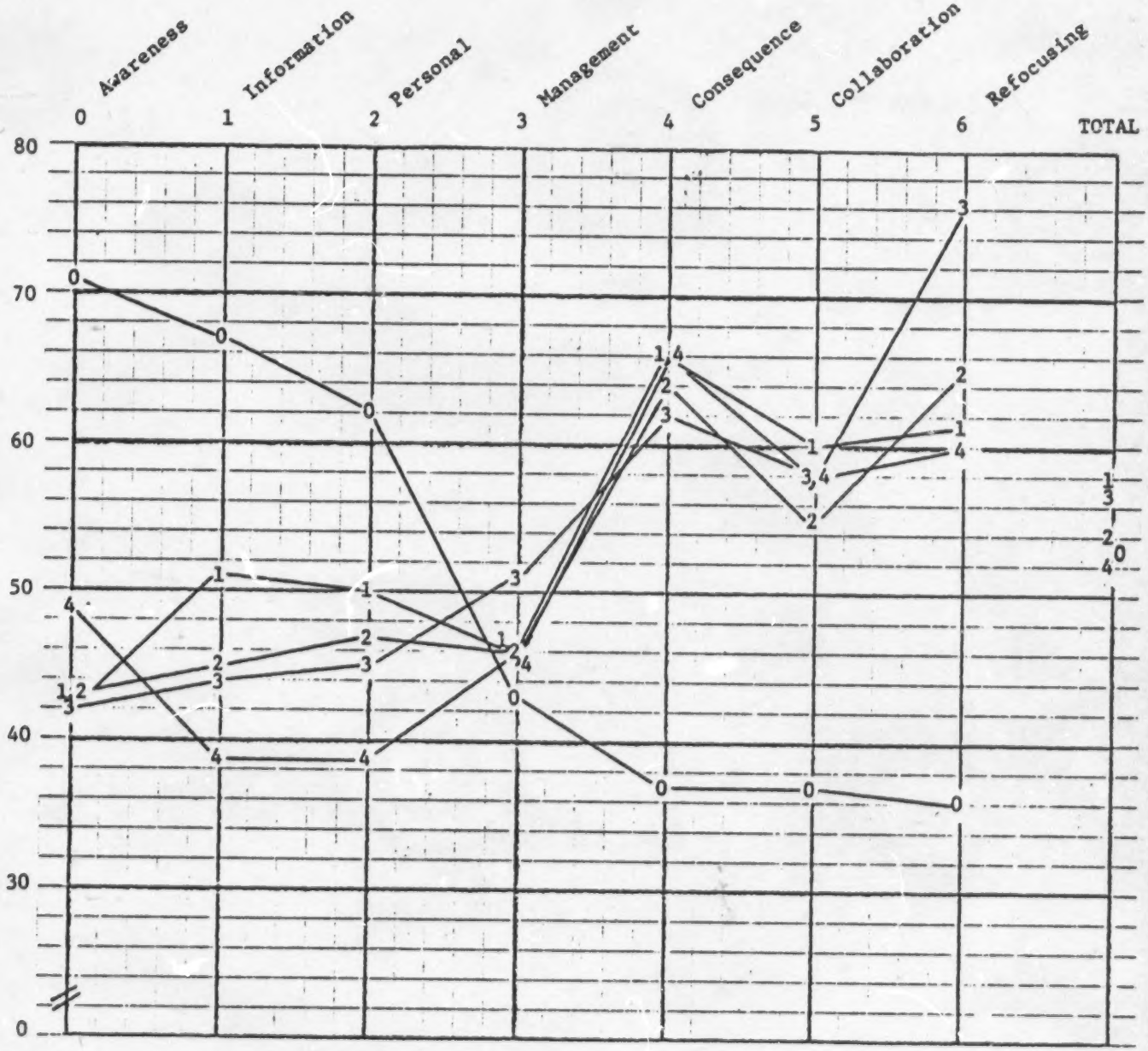
Trend 3. A third and less likely to be predicted pattern is the relatively low level of Stage 4 concerns. Stage 4 concerns are those that have to do with the impact and consequences of the innovation on learners. This stage has not been scored low by users of other innovations. We suspect that teachers do not see teaming as having direct impact on children, or perhaps it is just that other Stages of Concern are more intense.

In looking at the module concerns data, a similar picture emerges (see Figure 6). Again, the classic nonuser concerns profile is readily apparent. With the module users, however, it can be noted that the shift to the hypothesized concerns profile of the experienced user occurs quickly. First year module users as a population already have many of their management concerns resolved and are expressing more intense concerns of a consequence nature. The only area that seems to be shifting dramatically is the increase in Stage 6 concerns.

For the sample as a whole, generalizations about this Stage 6 shift have to be approached with caution. In general, it appears from our clinical analyses that with increasing experience, module users become interested in looking for other ideas and making adaptations in their module use that will increase the learning outcomes of students and the diversity of experiences that are available to them.

It also should be pointed out that the Stage 1 (Information) and Stage 2 (Personal) concerns decrease annually as the module users apparently become more knowledgeable and confident about what they are doing with their use of modules. Our anecdotal information suggests that this shift downward in terms of Stage 1 and Stage 2 concerns is also characteristic of those institutions where there is active support and resources for using modules. Clarity of this support must

Figure 6. Distribution of Professor's Concerns About Modules According to Years of Experience with Modules



0 = no experience with modules N = 91

1 = first year of module use N = 48

2 = second year of module use N = 35

3 = third year of module use N = 28

4 = fourth or later year of module use N = 50

be present, otherwise most people probably would not continue to use modules for four years or longer. It should be kept in mind, however, that this is data from the large sample, and when broken down by institution concerns profiles do not always indicate a shift to high Stage 6 with increased experience.

In summary, the concerns data on both teaming and modules leave a distinct impression that there is a classic nonuser concerns profile similar to what was hypothesized and that the user concerns profile appears to move through some developmental progression although the rate of movement and the shape are dependent on both time and on the characteristics of the institution's support systems. It is important to point out also that the characteristic user profiles seem to vary with innovations and with the make up of the sample, either classroom teachers or college professors. For example, Figure 7 illustrates the shift in concerns of a small group of experienced kindergarten teachers who were introduced to an innovative curriculum for the kindergarten being developed by the Southwest Educational Development Laboratory. The data show their concerns before an intensive summer workshop (A) and immediately after the workshop (B) and after they used the materials for several months (C). In this sample, Stage 4 concerns are consistently high. I would suggest that kindergarten teachers are inherently more child-oriented and in whatever they are doing this concern stage will be high.

Level of Use of the Innovation

As illustrated in Figure 8, each Level of Use was represented in our cross-sectional/longitudinal samples of the two innovations, teaming and modules. From this summary of LoU distribution it is quite apparent that the most dominant Level of Use is IV-A for both innovations. Level of Use V and VI individuals are relatively rare. I suspect that this is true within the universe, particularly in terms of Level VI. It appears that there are very few Level of Use VI

Figure 7. Concerns of Teachers Using SEDL -- Thinking and Reasoning

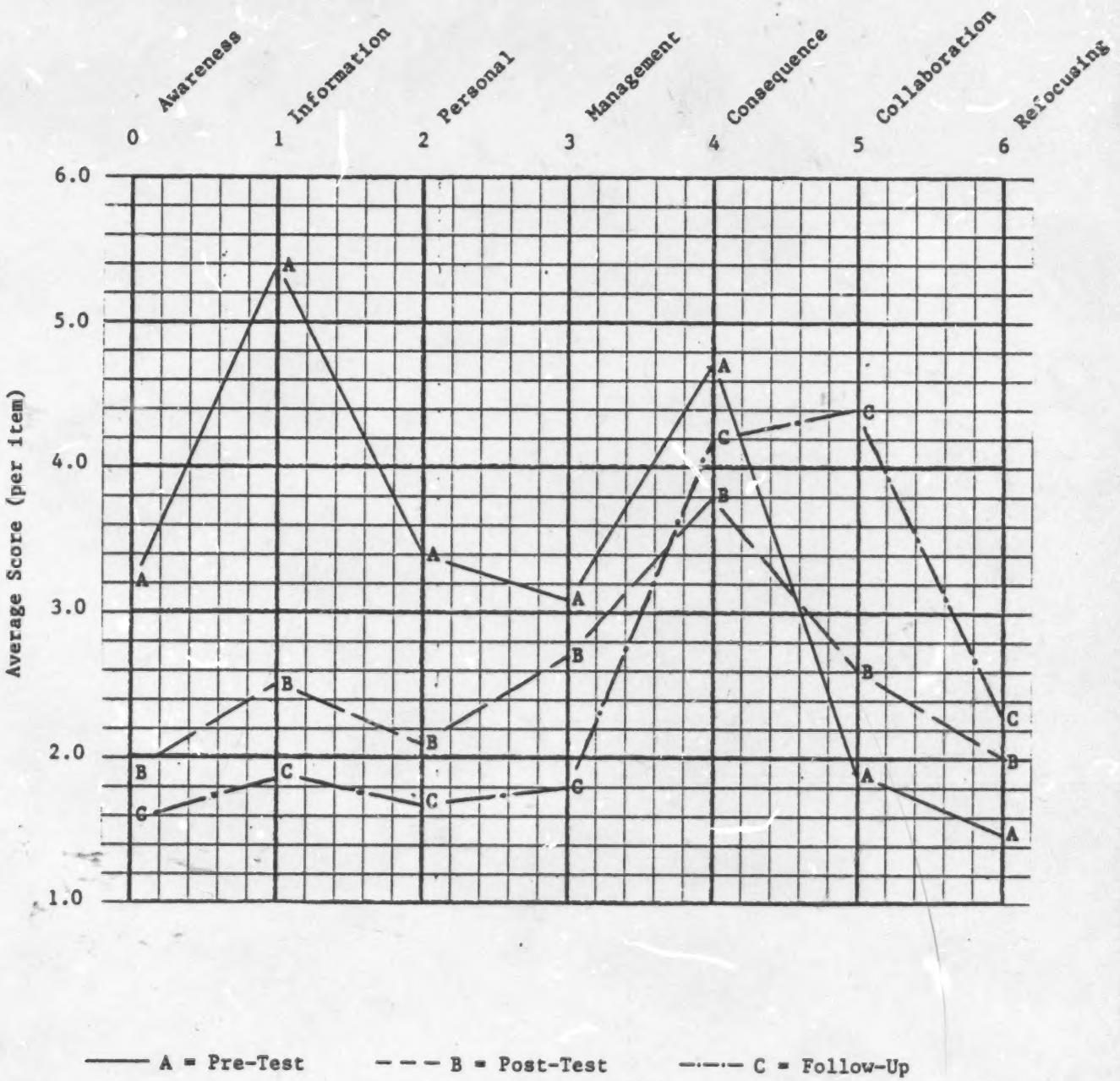


Figure 8. Percentage Distribution of Overall Level of Use for two innovations.

LEVELS OF USE	FALL 1974 Teaming	FALL 1974 Modules	SPRING 1975 Teaming	SPRING 1975 Modules
0	5	13	7	15
I	10	31	3	23
II	2	9	4	12
III	20	10	9	6
IVA	57	20	61	25
IVB	5	13	13	17
V	1	1	2	1
VI	1	2	3	1
	N=368	N=277	N=397	N=255

people at any one time with regard to a particular innovation. The skills and time demands that are involved, as well as the cognitive abilities that are required to function at a Level of Use VI, severely restrict the possibility of an individual functioning at LoU VI for a very long period of time, if at all.

We are just now beginning to look at the movement in LoU data from Fall 74 to Spring 75. Figure 9 summarizes the first look for the innovations of modules and teaming. Several apparent trends are indicated by these data:

1. LoU 0 people tend to stay there.
2. LoU I people go back to LoU 0, go ahead to LoU II, and also continue LoU I explorations.
3. LoU III people tend to move to LoU IV-A, although some move on to LoU IV-B.
4. LoU IV-A people in general do not move. Those that do, move to IV-B.
5. LoU IV-B people stay there or move to LoU IV-A.
6. LoU VI people move back to IV-A or IV-B.
7. Some LoU III and IV-A people move to LoU VI.

In general, it appears that there is not a linear development of Level of Use, especially once users reach LoU IV-A. In the samples as a whole, there are a variety of ways that movement takes place. However, we are finding that some individual institutions show definite movement by a large part of the users toward the same LoU. We suspect that this movement can be associated with certain adoption strategies, interventions and user system conditions, as well as some characteristics of the innovation. Exploration of the reasons for LoU movement is one of the chief directions that we would like to take in our future research.

As beginning steps toward this research, Brad Manning (1975) has been developing The Trouble-Shooting Checklist (TSC) which adoption agents can use

Figure 9. LoU Shifts from Fall 1974 to Spring 1975 Reported in Percentages.

FALL LoU	SPRING LoU 0	1	2	3	4A	4B	5	6
0	5	0.8	0.5	0.5	0.5			
I	3	9	4	0.8	2	0.3		0.1
II	0.3	0.8	1.5	1	0.6			
III	0.5	0.8	0.5	3.1	8	3	0.3	0.6
IVA	0.8		0.3	1.5	30	7	0.8	1
IVB			0.1	0.1	4	3		
V					0.1	0.6		0.1
VI					0.6	0.5	0.1	

to systematically assess institutional variables and conditions that could support or retard innovation adoption. On another front, Ollie Bown has been developing the Professional Environment Profile (PEP) which is completed by the individual members of the user system. The PEP is being designed to assess the innovative climate as perceived by the individuals and their need for innovative activity.

Implications for Decision-Makers

The preceding sections have attempted to describe in general the ideas and concepts involved in our research and initial verification of the Concerns-Based Adoption Model. I have described some of our research activities including measurement development and some of the research findings that we have processed to date. There are many different implications that can be drawn from our work and it has been interesting to watch people with different perspectives focus on very different ones. I hope that our research and the CBAM offer each of you at least one "A ha" from your perspective. I would like to spend a few minutes discussing some of the implications we think our work has for policy-makers. However, we also think the research has something to offer change agents, evaluators, and other practitioners as well.

The Legitimacy of Self-Concerns. All of us would like to think that we always function at the impact concern level. However, it is a basic finding of our work that everyone, when first involved with a new innovation, will have relatively intense self concerns to some degree. Rather than being intolerant of people for having self concerns, I think it is time that we recognize that it is fully legitimate and that it is our function as adoption agents and policy/decision-makers to aid in the resolution of self concerns and facilitate the movement towards more task and impact-related concerns. In our planning we need to anticipate self concerns and initiate actions to accommodate and resolve them.

The crime should not be to have self concerns, but to not accept their legitimacy and address them constructively.

Innovation Bundles. One of the problems that we have had in our research is determining just exactly what the innovation is that we are focusing on. It doesn't really matter how we as innovation developers or product disseminators define the innovation. In order to research its effects we have to define the innovation from the user's perspective. Thus, the textbook definition does not always apply. How the innovation is defined in one user system may not be the same in another. This has become a major problem recently with the development of large-scale, highly complex and catalytic "innovations." For example, take the innovation of Individually Guided Education (IGE). IGE is commonly referred to as an innovation. Yet, for our purposes, we were able to identify several different innovations within it, such as an administrative reorganization, teaming, individualized instruction, multi-age grouping, and so forth. Each one of these innovations is a part of the innovation bundle of IGE.

We think that it is critical for IGE facilitators and change agents involved with other innovation bundles to be able to effectively sort out the real Stages of Concern and Levels of Use of the innovation users with regard to each component of each bundle in order to provide relevant assistance and guidance to the users. For example, we know of instances where IGE facilitators have conducted very well planned workshops on criterion-referenced evaluation in reading which is an intervention targeted at the impact concern level for the innovation of individualized instruction, while the participants in the workshop were in the first year of teaming and had their most intense concerns at the self level about the innovation of teaming. Sorting out the innovations in such an innovation bundle is an important first step.

Interventions. This leads to a related implication of our work. We think

that interventions could be more systematically thought about and planned if consideration were given to Stages of Concern and Levels of Use. With the all too limited resources and skills that we have consuming teacher and facilitator time with interventions targeted toward "irrelevant" innovations is extremely costly. This is also true when the selected adoption strategy (overall game plan) employed to implement the innovation is not fully thought out in terms of its consequences for the concerns and use of the individuals directly involved.

For example, in the area of teacher education, many states and many colleges have mandated or decreed the establishment of Competency-Based Teacher Education (CBTE) programs. When change is decreed, there is not an automatic initiation of use of the innovation, but rather a marked increase in Stage 2 Personal concerns which results in less interest and less healthy exploration of the innovation and much more activity devoted to developing rationales for why the thing won't work.

I am not attempting to say that we can always avoid mandates. However, if something is going to be mandated, then the interventions that accompany the mandate need to take into account the likelihood of a significant increase in self concerns which will have to be addressed before movement toward sophisticated use of the innovation is likely to occur.

System Overload. Another aspect of our work has focused on the overall game plan that is employed when an innovation is first explored, decided upon and ultimately implemented. This game plan is what we refer to as an adoption strategy. One adoption strategy that relates back to the innovation bundle discussion is one we refer to as the Multiple Adoption Design or M.A.D. We know of several schools where as many as sixteen (!) innovation bundles as complicated as IGE and CBTE are being "adopted." Each of these innovation bundles requires additional outside personnel in the school, staff development activities and

conflicting signals and requirements in terms of use.

The result of this we call system overload (Kennamer & Hall, 1975). With regard to any one of the innovations, Stages of Concern and Levels of Use can be identified. If SoC and LoU were identified and sorted out for all of these different innovations, it would be impossible to focus on anyone of them long enough to accomplish very much. In practice, this results in the grapevine's reporting which innovation's representative will be in the school for that day, then that's the innovation that is pulled off the shelf for use. Much more serious thought must be given to the systemic and systematic planning of innovation adoption in schools and colleges if we are going to get the pay off that we wish.

Evaluation. While on the subject of "pay offs," there are also some implications in our work for evaluators. For example, we have been involved in an evaluation study in which ten schools were selected to implement IGE and ten other schools were matched with these according to SES and various other variables. The evaluators then conducted a classic study of the effectiveness of IGE using standardized achievement tests in reading and mathematics as a part of their criteria. In general, they found what many others have found -- that there were no significant differences in learning between the IGE and comparison schools.

One of the reasons, we suspect, that there were no significant differences has to do with the fact that the evaluation data was collected at the end of the first year of implementation. We suspect that most individuals during the first year of implementation are at best at the Level of Use III, Mechanical, use of the innovation. With many innovations, particularly ones as complex to implement as IGE, this probably means that the outcomes that are being attained are likely to be worse, at least initially, than they would have been if the innovation had not been implemented at all.

Another interesting implication also derives from our research of Levels of Use. We were fortunate to be able to collaborate with the evaluators in this study and to collect Level of Use information on the teachers (Loucks, 1975). We determined that only 84% of the IGE teachers were in fact "using" individualized instruction in reading while 49% of the supposed comparison group were "using" individualized instruction in reading. Thus, in fact, nearly as many of the comparison group were using the innovation as the supposed treatment group. Comparing achievement scores of these two groups obviously does not validly demonstrate the effectiveness of individualized instruction in reading. We suspect that evaluators need to take into account Level of Use when they are involved in evaluating curriculum.

Time. I mentioned at the beginning that there are some implications of our research that many decision-makers and policy-makers do not wish to face. Probably the largest one of these is the issue of time. T...I...M...E.... The CBAM concepts, our research data and the experiences of practitioners add up to the fact that implementing even relatively simple innovations takes time. Implementing any innovation and achieving a high level of use of that innovation requires more than a one- or two-day workshop and a cheerful "God Bless You." With complex, highly catalytic innovations and innovation bundles implementation can take three to five years. This is especially true if there is very limited or incorrectly targeted facilitation.

Although all of us can see the data and know that this may be true, decisions are still made to implement four and five different innovation bundles in one school at the same time. It is assumed that other innovations can be implemented in the next year, and very little thought is given to whether or not the innovations implemented the second year compliment at all those implemented in the first year. It is also continuing to be assumed that summative evaluation studies of the effects of the innovation can be successfully completed during the first

year of implementation. We think that at this point, we not only have a model and clinical experience that suggest that this is not so, we are also accumulating a large data base that affirms it. Based on this, we would make two strong recommendations. First, there should be restrictions on how many innovations are being "adopted" by an institution at any one time. Second, the nominal time for users to reach LoU IV-A (Routine) should be published with the promotional materials for that innovation and support for implementation should cover that time period.

Planned Change by Adaptive-Systemic Data-Based Decision-Making. My last comments have to do with planned change. We believe that as much attention needs to be given to the adoption of innovations as is presently being given to their development. We have attempted to point out some of the implications of implementing too many things concurrently and the system overload that results. We have attempted to point out that implementing innovations requires time and that various individuals move at various rates; just because poeple say the innovation is in the classroom or that people are using an innovation does not mean that they really are.

Change at the institutional level is accomplished only when the various individuals within the institution develop skill and confidence in using the innovation. This is true whether the innovation is a process or a product. Our research is finding that individuals develop at different speeds with regard to their concerns about an innovation and in terms of their use of the innovation. As is described in the entirety of the Concerns-Based Adoption Model, we think that it is possible to reduce the trauma of change and make change more efficient, effective and personalized by taking into account the concepts and procedures that have been discussed in this paper.

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DIMENSIONS OF THE CBAM

STAGES OF CONCERN (SOC) ABOUT THE INNOVATION

STAGE		TYPICAL EXPRESSIONS
0	AWARENESS	I DON'T KNOW ABOUT IT.
1	INFORMATIONAL	I WOULD LIKE TO KNOW MORE.
2	PERSONAL	HOW WILL I BE AFFECTED?
3	MANAGEMENT	IT TAKES ALL OF MY TIME.
4	CONSEQUENCE	I AM CHANGING SOME THINGS TO INCREASE OUTCOMES.
5	COLLABORATION	I NEED TO WORK WITH OTHERS.
6	REFOCUSING	THERE MIGHT BE SOMETHING BETTER.

LEVELS OF USE (LOU) OF THE INNOVATION

LEVEL		TYPICAL BEHAVIORS
0	NON USE	NO ACTION.
I	ORIENTATION	READING BROCHURE.
II	PREPARATION	TRAINING WORKSHOP.
III	MECHANICAL USE	LOGISTICAL PROBLEMS.
IV A	ROUTINE	NO CHANGES.
IV B	REFINEMENT	EVALUATES OUTCOMES.
V	INTEGRATION	WORKS WITH OTHERS.
VI	RENEWAL	LOOKS FOR DIFFERENT WAY.

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